



METZ LEWIS BRODMAN MUST O'KEEFE LLC

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Ohio Environmental
Protection Agency
Southeast District

May 4, 2018

Maria Galanti, Southeast District Office
Site Coordinator
Division of Environmental Response and Revitalization
Southeast District Office
2195 Front Street
Logan, OH 43138-8637

Re: 4K Industrial Park
Notice of Violation (NOV)
NOV
RCRA C – Hazardous Waste
Belmont County
OHD 010448231

JOHN W. LEWIS, II

Dear Ms. Galanti:

This letter follows up on our conference call of March 20, 2018 related to the above referenced matter in which Terry Dusz and I participated on behalf of 4K Industrial Park LLC (“4K”) and multiple representatives of Ohio EPA participated. My notes from that call reflect the following tentative understanding of how 4K and Ohio EPA hope to approach this matter going forward:

- The affirmative reach out by 4K was confirmed by Ohio EPA to effectively be an initial response by 4K within 14 days to the Notice of Violation.
- While 4K respectfully cannot agree with Ohio EPA’s interpretation of the legal effect of Paragraph 38 of the Sale Order, 4K and Ohio EPA will delay that legal debate to such future time as either party believes that it needs to be addressed.
- 4K is willing to share with Ohio EPA its records of results from the monitoring well presently on site. Attached to this letter is a monitoring result from July 27, 2015 which can be used by Ohio EPA to compare against earlier results in its possession, particularly with respect to chromium and other metal constituents which are the subject of the closure plan with Severstal Wheeling, Inc. and RG Steel, LLC.

Maria Galanti, Southeast District Office

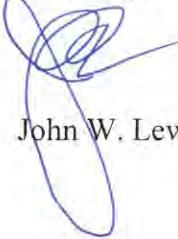
May 4, 2018

Page 2

- 4K has recently installed 2 other downgradient groundwater monitoring wells adjacent to the ChemTreat spill area, working with Ohio DNR in relation to its wastewater treatment facility. The monitoring wells will very soon be ready to be operating so as to collect additional data. 4K will share those initial results with Ohio EPA as soon as they are available, and 4K is willing to work with Ohio EPA on an agreement as to regular results sharing going forward.
- Depending upon monitoring results, it is possible that a determination can eventually be made with the closure plan is complete.

Once you receive this letter, we would like to schedule a call to get moving on cooperation. Also, please let me know who at Ohio EPA should be copies on future correspondence.

Sincerely,

A handwritten signature in blue ink, appearing to read "John W. Lewis, II".

John W. Lewis, II

JWL/rkm
Enclosure



2454 River Road
Cowansville, PA 16218
(724) 548-1774 office
(724) 991-3739 mobile
et.aesi@gmail.com
WBENC #2005118643

July 27, 2015

Terry Dusz
4K Industrial Park, LLC
1001 Main Street
Martins Ferry, Ohio 43935

Subject: Groundwater Monitoring Well Report
Martins Ferry, Ohio site

Dear Terry:

This report conveys the results of a groundwater investigation conducted at the 4K Industrial water treatment facility in Martins Ferry, OH during April through June 2015. The purpose of the investigation was to document groundwater quality conditions in the vicinity of the facility prior to start up. Field work for the investigation included drilling and installation of three groundwater monitoring wells, well development, and collection of groundwater samples for laboratory analysis. A map showing well locations is provided as Figure 1.

The wells were installed into the unconsolidated sediments natural to the Ohio River Valley using a hollow-stem auger drilling method. As the boring for each well was advanced to the target depth, soil samples were collected at each 5-foot depth interval. Soils were field logged to identify soil type, degree of water saturation, and other observable characteristics. Soil boring logs are provided in Attachment A.

The typical soil layering sequence encountered was clayey sandy silt overlying fine to medium silty sand. A consistent groundwater zone was identified in the sand layer. A surface layer of fill materials was encountered at locations 4K-1 and 4K-2.

Monitoring wells were constructed using 2-inch diameter SCH 40 PVC well screen and casing. The screened section of each well is 15 feet long, to accommodate the natural groundwater level fluctuations in the alluvial water bearing zones along the Ohio River. Well screens were gravel-packed through the augers to a minimum height of 2 ft. above the top of the slots. Bentonite pellets were used to seal the well bores. Each wellhead was equipped with a locked steel protective cover that was cemented in place and painted safety yellow. Finished well depths are 44 ft. for 4K-1 and 4K-2, and 33 ft. for 4K-3. Well construction logs are provided in Attachment B.

Following installation, the wells were developed to remove silt and sand accumulated in the well bottom as a result of ground disturbance during the drilling process. Approximately 50 gallons of groundwater was removed from each well using a combination of hand bailing and pumping. The wells were developed to ensure representative and turbid-free groundwater samples could be obtained for lab analysis.

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Within 24 hours of development, the wells were sampled for Ohio EPA Division of Drinking and Groundwater parameters, including general chemistry, volatile organic compounds (VOCs), metals and radiologicals. Groundwater samples were sent to Tra-Det Laboratories in Wheeling, WV for analysis. Tra-Det Lab sent the VOC samples to REIC Laboratory in Beaver, WV. Laboratory data reports are included in Attachment C.

Laboratory results for groundwater are summarized in Tables 1, 2 and 3. Collectively, these data comprise the pre-start-up dataset for the water treatment facility. Ohio EPAs maximum contaminant level (MCL), secondary MCL, and action level (AL) standards are shown for reference. Martins Ferry city well metals and radiologicals data are included on Tables 1 and 3.

For the inorganic compounds and metals shown in Table 1, most of the results are below standards. Low-level detections of select metals (arsenic, cadmium, lead, silver) may be related to higher filterable residue content, which is commonly a reflection of clay-sized sediment in the samples. Other parameters, such as chloride, sulfate, iron and manganese are elevated relative to secondary standards, with higher levels measured in 4K-2 relative to the other two wells. Chloride, sulfate, iron and manganese occur naturally in groundwater. Elevated levels may be related to past industrial activity in the Martins Ferry area. Thallium is present in all three wells. Thallium is a component of ore, and may be present due to historical ore processing in the region.

Analytical results for VOCs are all below detection (see Table 2).

Radiological analyses included gross alpha, gross beta, radium-226 and radium 228 (see Table 3). Laboratory results indicate radiologicals are present mainly at very low levels, except for gross alpha in 4K-2. Well 4K-2 should be resampled for radiologicals to confirm the validity of the initial result.

Thank you for the opportunity to work with 4K Industrial on this project. If you should have any questions or need additional information, please contact me at the number listed below or et.aesi@gmail.com.

Sincerely,

ALLEGHENY ENVIRONMENTAL SERVICES, INC.



Edie Tamburro, President

- Monitoring Well Chem. Treat Area
- * Down Gradient Monitoring Wells (3)



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Ohio Environmental
Protection Agency
Southeast District

SPILLER'S NAME	ADDITIONAL NAME	PHONE NO.
MONITORING WELL LOCATION		
#1 INDUSTRIAL PROPERTY		
MANUFACTURER (MPN)		
ADDRESS & DIRECTIONS		
Comments: Monitoring Report Request		

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Protection Agency
Southeast Agency

DRAWING NO.	4K-001	FIGURE NO. 1
MONITORING WELL LOCATIONS		
4K INDUSTRIAL FACILITY		
MARTINS FERRY, OHIO		

ALLEGHENY ENVIRONMENTAL SERVICES, INC.
Environmental Assessment, Regulatory Compliance, Remediation

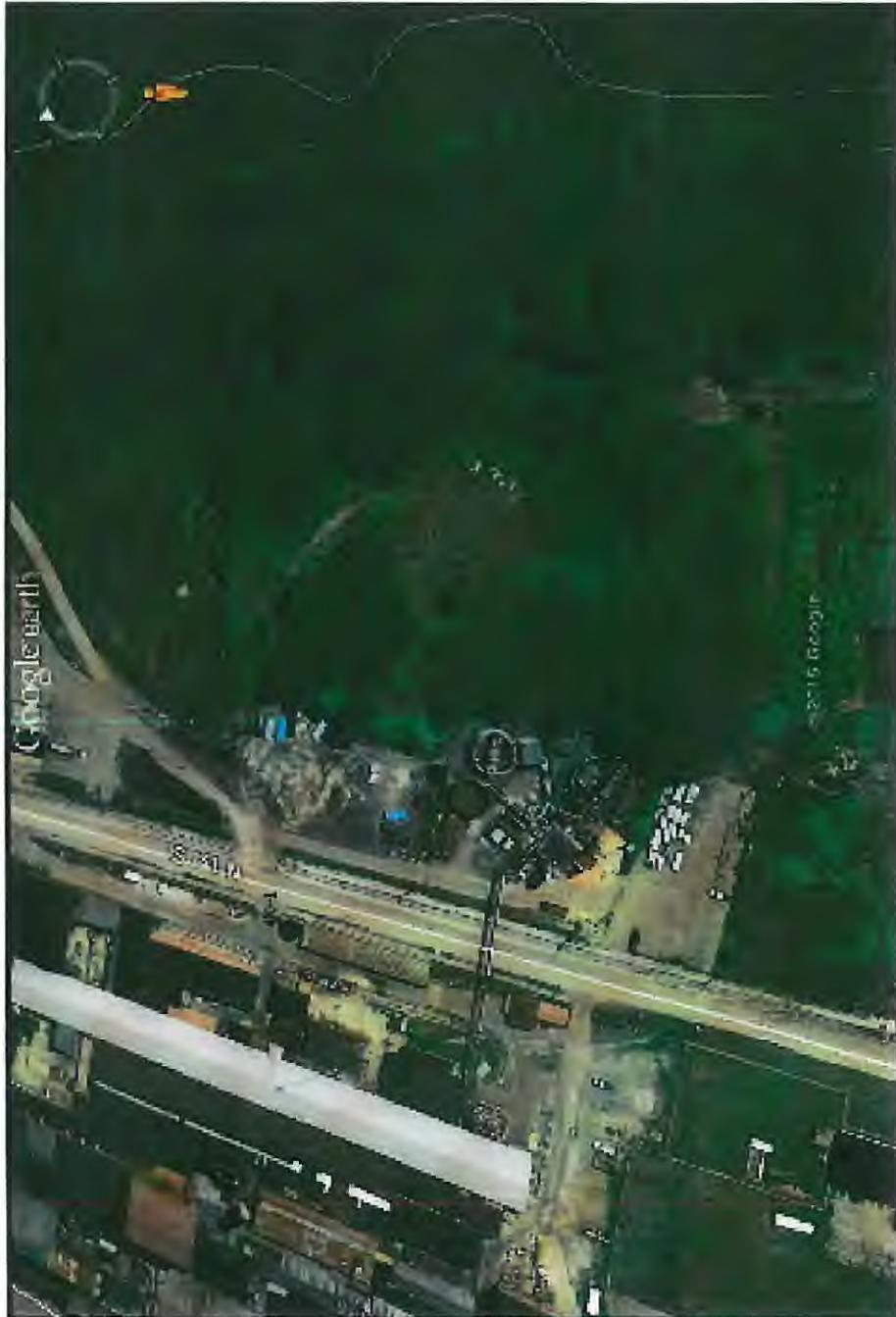


TABLE 1
4K INDUSTRIES
Martins Ferry, Ohio
INORGANIC CHEMICALS (IOCs) TEST RESULTS

Page 1 of 1

Monitoring Point ID	Units	MCL / Standard	Martins Ferry City Well	Reporting Limit	4K-1	4K-2	4K-3
Date Sampled	m-d-yr		04/21/2011		06/15/2015	06/15/2015	06/15/2015
Field Parameters:							
Flow	gpm				4	4	4
pH	S.U.	7.0 - 10.5 SMCL			6.32	5.90	5.96
Temperature	deg. C				16.3	15.1	14.5
Laboratory Parameters:							
Alkalinity Total, as CaCO ₃	mg/l	No standard	143	None	247	93.4	99.9
Antimony Total, Sb	mg/l	0.006	<0.004	0.004	ND (<0.01)	ND (<0.01)	ND (<0.01)
Arsenic Total, As	mg/l	0.01	<0.003	0.003	0.02	0.0106	0.0039
Barium Total, Ba	mg/l	2	0.0378	0.3	0.123	0.0396	0.0247
Beryllium Total, Be	mg/l	0.004	<0.001	0.001	ND (<0.001)	ND (<0.001)	ND (<0.001)
Cadmium Total, Cd	mg/l	0.005	<0.001	0.001	0.0057 J	0.0124	0.0066 J
Calcium Total, Ca	mg/l	No standard	90.2	None	281	341	163
Chloride, Cl	mg/l	250 SMCL	60.6	None	154	403	80.1
Chromium Total, Cr	mg/l	0.1	<0.005	0.01	0.0092 J	0.0234 J	ND (<0.004)
Copper Total, Cu	mg/l	1.3 AL	<0.050	0.05	0.0117	0.0091 J	0.0113
Cyanide, CN	mg/l	0.2	<0.010	0.002	ND (<0.005)	ND (<0.005)	ND (<0.005)
Fluoride Total, F	mg/l	4	0.26	0.0005	ND (<0.034)	ND (<0.034)	0.104 J
Iron Total, Fe	mg/l	0.3 SMCL	1.37	None	99.0	175	39
Lead Total, Pb	mg/l	.015 AL	<0.005	0.005	0.0136 J	0.235 J	ND (<0.01)
Magnesium Total, Mg	mg/l	No standard	19.1	None	59.5	122	18.9
Manganese Total, Mn	mg/l	.05 SMCL	0.503	None	21.7	70.2	22.2
Mercury Total, Hg	mg/l	0.002	<0.005	0.0005	ND (<0.0002)	ND (<0.0002)	ND (<0.0002)
Nickel Total, Ni	mg/l	No standard	<0.010	0.02	ND (<0.003)	0.0964	0.0796
Nitrate, NO ₃ (as N)	mg/l	10	<0.10	0.0005	0.130 J	0.327	0.126 J
Nitrate-Nitrite, NO ₃ -NO ₂ (as N)	mg/l	10	<0.10	0.0005	0.130 J	0.327	0.126 J
Nitrite, NO ₂	mg/l	1	<0.10	0.0001	ND (<0.024)	ND (<0.024)	ND (<0.024)
pH, Lab S.U.	S.U.	7.0 - 10.5 SMCL	7.24	None	6.14 H	5.57 H	6.07 H
Residue, Total Filt (Diss)	mg/l	500 SMCL	508	None	1,440	2,520	856
Selenium Total, Se	mg/l	0.05	0.0103	0.005	0.0004 J	0.0002 J	0.0002 J
Silver Total, Ag	mg/l	0.1 SMCL	<0.010	None	0.0035	0.0122	0.0033
Sodium Total, Na	mg/l	No standard	60.2	None	32.5	53.2	13.5
Sulfate, SO ₄	mg/l	250 SMCL	170	None	647	1,300	391
Thallium Total, Tl	mg/l	0.002	<0.0015	0.0015	0.317	1.46	0.509
Zinc Total, Zn	mg/l	5	0.0188	None	ND (<0.005)	0.541	1.32

J = Analyte detected below quantitation limits

H = Holding times for preparation or analysis exceeded

MCL = Maximum Contaminant Level

SMCL = Secondary Maximum Contaminant Level, Advisory limit only

AL = Action Level

TABLE 2
4K INDUSTRIES
Martins Ferry, Ohio
VOLATILE ORGANIC CHEMICALS (VOCs) TEST RESULTS

Monitoring Point ID	Units	Minimum Detection Limits	4K-1	4K-2	4K-3
Date Sampled	m-d-yr		06/15/2015	06/15/2015	06/15/2015
Field Parameters:					
Flow	gpm		4	4	4
pH	S.U.		6.32	5.90	5.96
Temperature	deg. C		16.3	15.1	14.5
Laboratory Parameters:					
Benzene	ug/l	0.250	ND	ND	ND
Carbon Tetrachloride	ug/l	0.250	ND	ND	ND
Chlorobenzene	ug/l	0.250	ND	ND	ND
1,2-Dichlorobenzene	ug/l	0.250	ND	ND	ND
1,4-Dichlorobenzene	ug/l	0.250	ND	ND	ND
1,2-Dichloroethane	ug/l	0.250	ND	ND	ND
1,1-Dichloroethene	ug/l	0.250	ND	ND	ND
cis-1,2-Dichloroethene	ug/l	0.250	ND	ND	ND
trans-1,2-Dichloroethene	ug/l	0.250	ND	ND	ND
1,2-Dichloropropane	ug/l	0.250	ND	ND	ND
Ethylbenzene	ug/l	0.250	ND	ND	ND
Methylene chloride	ug/l	0.250	ND	ND	ND
Styrene	ug/l	0.250	ND	ND	ND
Tetrachloroethene	ug/l	0.250	ND	ND	ND
Toluene	ug/l	0.250	ND	ND	ND
1,2,4-Trichlorobenzene	ug/l	0.250	ND	ND	ND
1,1,1-Trichloroethane	ug/l	0.250	ND	ND	ND
1,1,2-Trichloroethane	ug/l	0.250	ND	ND	ND
Trichloroethene	ug/l	0.250	ND	ND	ND
Vinyl chloride	ug/l	0.250	ND	ND	ND
o-Xylene	ug/l	0.250	ND	ND	ND
m,p-Xylene	ug/l	0.500	ND	ND	ND
Xylenes (Total)	ug/l	NA	ND	ND	ND
Methyl tert-butyl ether	ug/l	0.250	ND	ND	ND

TABLE 3
4K INDUSTRIES
Martins Ferry, Ohio
RADIOLOGICAL TEST RESULTS

				Page 1 of 1			
Monitoring Point ID		Martins Ferry City Well		Reporting Limit		4K-1	
Date Sampled	Units	MCL/Standard				4K-2	4K-3
Field Parameters:						06/15/2015	06/15/2015
Flow	gpm						
pH	S.U.						
Temperature	deg. C						
Laboratory Parameters:							
Value (\pm Uncertainty)							
Gross Alpha/Beta Analysis	pCi/L	15 / 5 AL	8.19 (\pm 1.91)	3	13 (\pm 4.88)	2280 (\pm 500)	26.3 (\pm 162)
Alpha, Gross	pCi/L	4 mrem/yr / 50 pCi/L AL	19.24 (\pm 1.75)	4	4.09 (\pm 3.13)	ND (\pm 221)	ND (\pm 136)
Beta, Gross	pCi/L	5 (sum with 226 result)	<1 (\pm 0.54)	1	2.55 (\pm 0.98)	4.28 (\pm 1.24)	3.32 (\pm 1.16)
Radium-226 Analysis	pCi/L	5 (sum with 226 result)	<1 (\pm 0.54)	1	1.00	1.00	1.00
Radium-226 Yield	pCi/L	5 (sum with 226 result)	1.19 (\pm 0.45)	1	10.5 (\pm 6.74)	8.72 (\pm 8.55)	20.9 (\pm 10.8)
Radium-228 Analysis	pCi/L	5 (sum with 226 result)	1.19 (\pm 0.45)	1	1.00	1.00	0.770
Radium-228 Yield	pCi/L	5 (sum with 226 result)	1.19 (\pm 0.45)	1	1.00	1.00	0.770

MCL = Maximum Contaminant Level
AL = Action Level

VISUAL CLASSIFICATION OF SOILS

BORING NO. 4K-1
PAGE 1 OF 2

PROJECT NO.:		PROJECT NAME: WATER TREATMENT PLANT					
ELEVATION:		LOCATION: MARTINS FERRY, OH					
ENGINEER/GEOLOGIST: E. TAMBURRO		GWL: DEPTH		DATE/TIME		DATE: 4/24/2015	
DRILLING CO.: Rindfuss Drilling		DEPTH		DATE/TIME		DATE STARTED: 4/24/2015	
DRILLER: Bob Rindfuss		CASING SIZE / DEPTH: 2" PVC /				DATE COMPLETED: 4/24/2015	
DRILLING METHODS: 4 1/4" HOLLOW STEM AUGER / SPLIT SPOON							
DATE BACKFILLED:							
DEPTH (ft.)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER (ft.)	RECOVERY (ft.)	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
				8" CONCRETE AT SURFACE			
5							
7	1/1/2/2	0.7		BLACK GRANULAR SINTER PEEL, MOIST, LOOSE			
10							
12	1/1/3/3	1.2		GRAY AND BROWN CLAYET SILTY SILT, COHESIVE OCCASIONAL ROCK FRAGMENT WOOD LAST 0.4', MOIST			
15							
17	1/1/3/3	1.7		GRAY CLAYET SILT, COHESIVE, MOIST, UNIFORM TEXTURE			
20							
22	2/4/4/5	1.6		GRAY CLAYET SILT AS ABOVE, MOIST, WET, HIGHLY COHESIVE			
25							
27	H2O IN SPOON	2/2/3/3	1.2	SAME AS ABOVE, WET			
NOTES: APPEARS TO BE WATER IN SILT AT 20 FT. (APPROX.)							

VISUAL CLASSIFICATION OF SOILS

BORING NO. 4K-1
 PAGE 2 OF 2

PROJECT NO.:	PROJECT NAME: WASTEWATER TREATMENT PLANT		
ELEVATION:	LOCATION: MARTINS FERRY, OH		
ENGINEER/GEOLIST: E. TAMBYURRO	GWL: DEPTH	DATE/TIME	DATE: 4/24/15
DRILLING CO.: Rindfuss Drilling	DEPTH	DATE/TIME	DATE STARTED: 4/24/15
DRILLER: Bob Rindfuss	CASING SIZE / DEPTH:	2"Ø PVC/	DATE COMPLETED: 4/24/15
DRILLING METHODS: 4 1/4" ID Hollow Stem Auger/SPLIT SPOON			DATE BACKFILLED: 4/24/15

DEPTH (FT) (m)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER (6")	RECOVERY (FT)	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
32	No Hd on rod	1/2/2/3	2.0	SAME AS ABOVE COLOR ALTERED AND GRAY COLOR LESS OXIDE IN ITES LESS ADAMANT, VERY MOIST			
35	No Hd on rod	1/1/3/4	2.0	GRAY CLAYEY SANDY SILT STRATIFIED WITH ALTERED LAYER OF CLAYEY SILT AND CLAYEY SAND; SILT AND SANDY SILT; MOIST TO VERY MOIST, COHESIVE			
40	No Hd on rod	4/8/17/2	1.1	GRAY FINE TO MEDIUM SAND WELL SORTED, SATURATED (0.3') GRAY FINE TO COARSE SAND, COQUEL PEBBLES AND COBBLES, SATURATED (0.8')			
45				END OF BORING AT 45 FT.			

NOTES:

SET 2"Ø SCH 40 PVC MONITORING WELL AT 45 FT. DEPTH
 15 FT 2"Ø PVC 0.020" SLOT WELL SCREEN (30 to 45 FT.)
 CLEAN SILICA GRAVEL PACK (27 to 45 FT.)
 BENTONITE PELLET SEAL (2 to 45 FT.)
 LOCKABLE STEEL PROTECTIVE COVER
 WELL CASING STICK UP = 2.0 FT.

VISUAL CLASSIFICATION OF SOILS

BORING NO. 4K-2
PAGE 1 OF 2

PROJECT NO.:	PROJECT NAME: WATER TREATMENT PLANT		
ELEVATION:	LOCATION: MARTINS FERRY, WV		
ENGINEER/GEOLOGIST: E. TAMBIERRA	GWL DEPTH	DATE/TIME	DATE: 4/23/15
DRILLING CO.: Rindfuss Drilling	DEPTH	DATE/TIME	DATE STARTED: 4/23/15
DRILLER: Bob Rindfuss / Adam	CASING SIZE / DEPTH: 2"Ø PVC /		DATE COMPLETED: 4/23/15
DRILLING METHODS: 4 1/4" TD HOLLOW STEM AUGER / SPLIT SPOON			DATE BACKFILLED: 4/23/15

VISUAL CLASSIFICATION OF SOILS

BORING NO. 4K-2
PAGE 2 OF 2

PROJECT NO.:	PROJECT NAME: WATER TREATMENT PLANT		
ELEVATION:	LOCATION: MARTINS FERRY, OH		
ENGINEER/GEOLOGIST: E. TAMBUERO	GWL: DEPTH	DATE/TIME	DATE: 4/23/15
DRILLING CO.: Rindfuss Drilling	DEPTH	DATE/TIME	DATE STARTED: 4/23/15
DRILLER: Bob Rindfuss	CASING SIZE / DEPTH:	/	DATE COMPLETED:
DRILLING METHODS: 4 1/4" IN HOLLOW STEM AUGER / SPLIT SPOON			DATE BACKFILLED:

DEPTH (FT.)	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER (G)	RECOVERY (%)	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
30		1/2/2/4	2.0	SAME LIGHT BROWN CLAYEY SANDY SILT AS ABOVE, COHESIVE, WET			
32							
35							
37	NO H ₂ O IN AUGERS	1/2/2/2	2.0	GRAY CLAYEY SANDY SILT INTERLAYERED WITH GRAY SILTY FINE SAND AND LAYERS ONLY SLIGHTLY COHESIVE, WATER SATURATED, HIGHLY STRATIFIED SEDIMENT			
40							
42	H ₂ O IN SPOON	1/1/3/8	1.4	GRAY SILTY SAND, SOFT, SILTY SATURATED (0.1'), GRAY, SILTY FINE TO MED SAND AND FINE TO COARSE GRAVEL AND PEBBLES, SATURATED (0.5'), GRAY, SILTY SAND, SATURATED (0.2')			
45'				END OF BORING AT 45'			

NOTES:

SET 2" Ø PVC SCH 40 MONITORING WELL
 15 FT. 2" Ø PVC SCH 40 SCREEN (0.020" slot) at 30 to 45'
 CLEAN SILICA GRAVEL PACK AT 28 TO 45 FT.
 BENTONITE PELLET (MED CHIPS) AT 2 TO 28 FT.
 CEMENTED LOCKABLE STEEL WELL COVER
 2 BUMPER POSTS
 WELL CASING STICK UP = 2.0 ft.

VISUAL CLASSIFICATION OF SOILS

BORING NO. 4K-3
PAGE 1 OF 1

PROJECT NO.:	PROJECT NAME: WATER TREATMENT PLANT		
ELEVATION:	LOCATION: MARTINS FERRY, OH		
ENGINEER/GEOLOGIST: E. TAMMURRI	GWL: DEPTH	DATE/TIME	DATE: 4/23/2015
DRILLING CO.: Rindfuss Drilling	DEPTH	DATE/TIME	DATE STARTED: 4/23/15
DRILLER: Bob Rindfuss	CASING SIZE / DEPTH:	2" PVC /	DATE COMPLETED: 4/23/15
DRILLING METHODS: 4 1/4" Hollow Stem Auger / SPLIT SPOON			DATE BACKFILLED: 4/23/15

ATTACHMENT B

WELL CONSTRUCTION LOGS

**ALLEGHENY
ENVIRONMENTAL
SERVICES, INC.**

Environmental Assessment, Regulatory Compliance and Remediation

WELL CONSTRUCTION LOG

(Unconsolidated)

PROJECT NAME: <u>4 K Industrial</u>	DATE: <u>4/24/2015</u>	WELL I.D.: <u>4K-1</u>														
PROJECT NUMBER: _____	PERSONNEL: <u>E. Tamburro</u>															
SITE LOCATION: <u>Martins Ferry, OH</u> (City, State)	DRILLING CO.: <u>Rindfuss Drilling</u>															
<table border="1"> <tr> <td rowspan="5"> <p>Protective Casing: Diameter <u>6</u> in. Material <u>Steel</u></p> <p>Concrete</p> <p>Grout</p> <p>Borehole Dia. <u>8</u> in.</p> <p>Well Casing</p> <p>2.0 ft.</p> <p>Land Surface</p> <p>2 ft.</p> <p>27 ft.</p> <p>29.1 ft.</p> <p>44.1 ft.</p> <p>45 ft.</p> </td> <td>Datum <u>Mean Sea Level</u></td> </tr> <tr> <td>Land Surface Elevation _____ ft.</td> </tr> <tr> <td>Top of Well Casing Elevation _____ ft.</td> </tr> <tr> <td>Well Type/Intended Use <u>Groundwater Monitoring</u></td> </tr> <tr> <td>Installation Method <u>Hollow Stem Auger</u></td> </tr> <tr> <td>Water Used <u>None</u></td> </tr> </table>			<p>Protective Casing: Diameter <u>6</u> in. Material <u>Steel</u></p> <p>Concrete</p> <p>Grout</p> <p>Borehole Dia. <u>8</u> in.</p> <p>Well Casing</p> <p>2.0 ft.</p> <p>Land Surface</p> <p>2 ft.</p> <p>27 ft.</p> <p>29.1 ft.</p> <p>44.1 ft.</p> <p>45 ft.</p>	Datum <u>Mean Sea Level</u>	Land Surface Elevation _____ ft.	Top of Well Casing Elevation _____ ft.	Well Type/Intended Use <u>Groundwater Monitoring</u>	Installation Method <u>Hollow Stem Auger</u>	Water Used <u>None</u>							
<p>Protective Casing: Diameter <u>6</u> in. Material <u>Steel</u></p> <p>Concrete</p> <p>Grout</p> <p>Borehole Dia. <u>8</u> in.</p> <p>Well Casing</p> <p>2.0 ft.</p> <p>Land Surface</p> <p>2 ft.</p> <p>27 ft.</p> <p>29.1 ft.</p> <p>44.1 ft.</p> <p>45 ft.</p>	Datum <u>Mean Sea Level</u>															
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Other Remarks <u>Ohio River at Flood Stage</u>																

**ALLEGHENY
ENVIRONMENTAL
SERVICES, INC.**

Environmental Assessment, Regulatory Compliance and Remediation

WELL CONSTRUCTION LOG

(Unconsolidated)

PROJECT NAME: 4 K Industrial

DATE: 4/23/2015

WELL I.D.: 4K-2

PROJECT NUMBER: _____

PERSONNEL: E. TAMBURRO

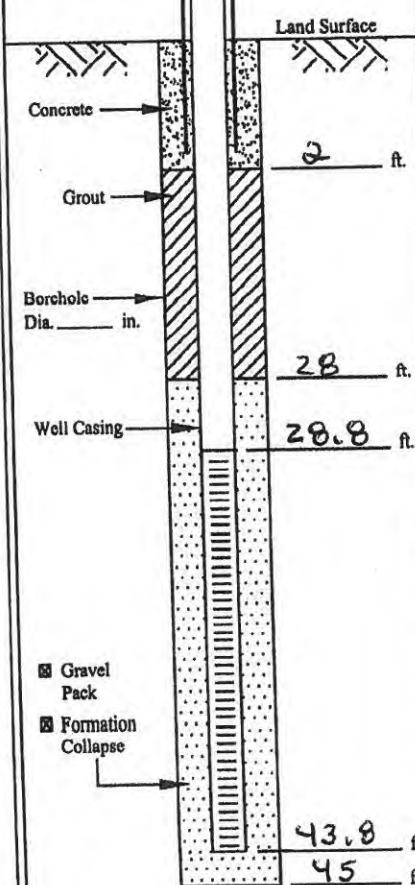
SITE LOCATION: Martins Ferry, OH

DRILLING CO.: RINDFUSS DRILLING

(City, State)

Protective Casing:
Diameter 6 in.
Material Steel

2.0 ft.



Datum Mean Sea Level

Land Surface Elevation _____ ft.

Top of Well Casing Elevation _____ ft.

Well Type/Intended Use Groundwater Monitoring

Installation Method Hollow Stem Auger

Water Used None

WELL SPECIFICATIONS

WELL SCREEN

Material PVC (Sch 40)

WELL CASING

Material PVC (Sch 40)

Diameter 2 in.

Diameter 2 in.

Slot Size 0.020 - inch

Installed from 28.8 to 43.8 ft.

Height Above/Below Land Surface 2.0 ft.

FILTER PACK

Manufacturer _____

GROUT

Type(s) Bentonite: Medium chips

Type #5 Clean silica

Amount Used - 50 lb. bags

Amount Used - 50 lb. bags

Depth Interval(s) _____

Depth Interval 28 to 45 ft.

2 to 28 ft

WELL DEVELOPMENT

Date 6/15/2015

Static Water Level 27.71' (PVC)

Development Method Bailer, 12VDC Pump

Pumping

Well pumped at NA gpm for --- Water Level NA

Total Gallons Removed 50

Specific Capacity NA gal./ft.

Comments bailed 35 gal
pumped 15 gal (silty)

Other Remarks Ohio River at Flood stage

**ALLEGHENY
ENVIRONMENTAL
SERVICES, INC.**

Environmental Assessment, Regulatory Compliance and Remediation

WELL CONSTRUCTION LOG

(Unconsolidated)

PROJECT NAME: 4K Industrial
PROJECT NUMBER: _____
SITE LOCATION: Martins Ferry, WV
(City, State)

DATE: 4/23/15

WELL I.D.: 4K-3

PERSONNEL: E. TAMBURRO

DRILLING CO.: Rindfuss Drilling

<p>Protective Casing: Diameter <u>6</u> in. Material <u>Steel</u></p> <p>Concrete</p> <p>Grout</p> <p>Borehole Dia. <u>6</u> in.</p> <p>Well Casing</p> <p>2.3 ft.</p> <p>Land Surface</p> <p>2 ft.</p> <p>16 ft.</p> <p>17.9 ft.</p> <p>32.9 ft.</p> <p>33 ft.</p> <p><input checked="" type="checkbox"/> Gravel Pack</p> <p><input checked="" type="checkbox"/> Formation Collapse</p>	Datum <u>Mean Sea Level</u>																
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Other Remarks <u>Ohio River at Flood Stage</u>																	

ATTACHMENT C

GROUNDWATER SAMPLING LOGS

**ALLEGHENY
ENVIRONMENTAL
SERVICES, INC.**

GROUND-WATER SAMPLING LOG

Environmental Assessment, Regulatory Compliance, Remediation

Project Name: 4K Martins Ferry Project ID: Water Treatment System Site Location : Martins Ferry, Ohio Weather: cloudy, 82 deg. F		Well ID: 4K-1 Duplicate Sample ID: _____ Date: 06/15/15 Time: 1950 hrs Sampler(s): E. Tamburro, B. Hunt Other Personnel: _____																								
Well Specifications Well Construction: PVC Well Diameter: 2-inch Reference Point (RP): Top of PVC well casing Reference Point Elevation: ft. msl Well Depth (RP): 46.1 ft. Depth to Water (RP): 26.37 ft. Height of Water Column: 19.73 ft. Well Casing Volume: 0.16 gal./ft. Total Water Volume in Well: 3.2 gal.		Field Analyses / Observations pH: 6.32 S.U. Specific Conductance: 1860 umhos/cm Temperature: 16.3 deg. C Turbidity : 25 to 35 NTUs NTUs Color: pale grey Other Observations: samples slightly silty at first, then clear _____																								
Well Evacuation / Sampling Volume of Water Evacuated: 55 gal. Date of Well Evacuation: 6/15/15 Time of Well Evacuation: 1100 hrs Evacuation Method: dedicated bailer, 12 VDC pump Sampling Device: 12 VDC pump Comments: _____ _____		Sample Containers / Preservatives / Laboratory Analyses <table border="1"> <thead> <tr> <th>Container</th> <th>Preservative</th> <th>Analyses Requested</th> </tr> </thead> <tbody> <tr> <td colspan="3">OEPA Div of Drinking and Groundwater Well Parameters</td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	Container	Preservative	Analyses Requested	OEPA Div of Drinking and Groundwater Well Parameters																				
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<i>Well Casing Volumes (gal/ft)</i>			
1 1/4" = 0.077	2" = 0.16	3" = 0.37	6" = 1.46
1 1/2" = 0.10	2 1/2" = 0.24	4" = 0.65	8" = 2.61

**ALLEGHENY
ENVIRONMENTAL
SERVICES, INC.**

GROUND-WATER SAMPLING LOG

Environmental Assessment, Regulatory Compliance, Remediation

Project Name: 4K Martins Ferry Project ID: Water Treatment System Site Location : Martins Ferry, Ohio Weather: cloudy, 82 deg. F		Well ID: 4K-2 Duplicate Sample ID: _____ Date: 06/16/15 Time: 1015 hrs Sampler(s): E. Tamburro, B. Hunt Other Personnel: _____																								
Well Specifications Well Construction: PVC Well Diameter: 2-inch Reference Point (RP): Top of PVC well casing Reference Point Elevation: ft. msl Well Depth (RP): 45.8 ft. Depth to Water (RP): 27.71 ft. Height of Water Column: 18.09 ft. Well Casing Volume: 0.16 gal./ft. Total Water Volume in Well: 2.9 gal.		Field Analyses / Observations pH: 5.90 S.U. Specific Conductance: not measured Temperature: 15.1 deg. C Turbidity : not measured Color: pale orange Other Observations: _____ _____																								
Well Evacuation / Sampling Volume of Water Evacuated: 50 gal. Date of Well Evacuation: 6/15/15 Time of Well Evacuation: 1200 hrs Evacuation Method: dedicated bailer, 12 VDC pump Sampling Device: dedicated bailer Comments: water silty after development, let well settle overnight prior to collecting lab samples		Sample Containers / Preservatives / Laboratory Analyses <table border="1"> <thead> <tr> <th>Container</th> <th>Preservative</th> <th>Analyses Requested</th> </tr> </thead> <tbody> <tr> <td colspan="3">OEPA Div of Drinking and Groundwater Well Parameters</td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	Container	Preservative	Analyses Requested	OEPA Div of Drinking and Groundwater Well Parameters																				
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**ALLEGHENY
ENVIRONMENTAL
SERVICES, INC.**

GROUND-WATER SAMPLING LOG

Environmental Assessment, Regulatory Compliance, Remediation

Project Name: 4K Martins Ferry
Project ID: Water Treatment System
Site Location: Martins Ferry, Ohio

Weather: cloudy, 82 deg. F

Well ID: 4K-3

Duplicate Sample ID: _____

Date: 06/15/15

Time: 1710 hrs

Sampler(s): E. Tamburro, B. Hunt

Other Personnel: _____

Well Specifications

Well Construction: PVC
Well Diameter: 2-inch
Reference Point (RP): Top of PVC well casing
Reference Point Elevation: ft. msl
Well Depth (RP): 35.2 ft.
Depth to Water (RP): 24.33 ft.
Height of Water Column: 10.87 ft.
Well Casing Volume: 0.16 gal./ft.
Total Water Volume in Well: 1.7 gal.

Field Analyses / Observations

pH: 5.96 S.U.
Specific Conductance: 1147 umhos/cm
Temperature: 14.5 deg. C
Turbidity: 3.6 NTUs
Color: clear

Other Observations: _____

Well Evacuation / Sampling

Volume of Water Evacuated: 45 gal.
Date of Well Evacuation: 6/15/15
Time of Well Evacuation: 1600 hrs

Evacuation Method: dedicated bailer, 12 VDC pump
Sampling Device: 12 VDC pump

Comments: _____

Sample Containers / Preservatives / Laboratory Analyses

Container	Preservative	Analyses Requested
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OEPA Div of Drinking and Groundwater Well Parameters

Remarks:

Well Casing Volumes (gal/ft)

1 1/4" = 0.077

2" = 0.16

3" = 0.37

6" = 1.46

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4" = 0.65

8" = 2.61

ATTACHMENT D

LABORATORY DATA REPORTS